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ABSTRACT

A high school teacher and a librarian are collecting and analyzing material in every medium for teaching John Steinbeck's novel, "The Grapes of Wrath," including the political and social history of the 1930s--altogether some 33 topic headings touched upon in the novel and in about 54 related works: books, films, television documentaries, still photographs, record albums and sound tapes, filmstrips, magazine and newspaper articles, and more. These are being linked and indexed by topic to provide an extensive and interesting educational resource and an interactive teaching tool, the Grapevine. This project will reflect the perspectives of a classroom teacher teaching the novel, a high school librarian, and an educational technologist. When the database is completed, teachers will have an extensive body of teaching material linked by topic, which they will be able to edit, modify, add to, and rearrange. In its ultimate stage of development, the system will permit a teacher to manipulate and integrate text, still and moving pictures, and sound in order to create multimedia documents. The developers of this system need a database program that will allow them to make many links from a single piece of information; create an index for use in searching, browsing, and manipulating text; and provide an interface with CD-ROM. They also need an authoring system that will allow the user to add, change, and link materials, and copyright issues will have to be worked out. (EW)

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Grapevine

An Excursion into Steinbeck Country

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What Is It?

A high school teacher, and a librarian are collecting and analyzing material in every medium for teaching John Steinbeck's *The Grapes of Wrath*, including the political and social history of the 1930s—altogether some 33 topic headings touched upon in the novel and in about 54 related works: books, films, television documentaries, still photographs, record albums and sound tapes, filmstrips, magazine and newspaper articles, and more. These are being linked and indexed by topic to provide an extensive and interesting educational resource and an interactive teaching tool. In this project, we are provided with the perspectives of a classroom teacher teaching the novel (Hanlon), a high school librarian (Campbell), and an education/technology theorist (Kristina Hooper from Apple Computer, Inc.). Our sense is that the fruitful collaboration will produce great juice—if not wine.

What Need Is Being Met?

An English teacher working with *The Grapes of Wrath* may be aware of the many ramifications of the novel in terms of American institutions and history but lack the specialized knowledge and the time required to locate the related films, books, and other materials that would help most to make the connections between literature and the world his or her students live in. The teacher of social studies, on the other hand, may hesitate to encroach on the world of literature, or be unaware of how relevant a novel like this one can be to social and political matters.

Even the most conscientious and informed teacher is hard-pressed to assemble large collections of teaching materials in many mediums and to make them accessible to students. School librarians typically gather a modest number of such materials at a teacher's special request or compile a subject bibliography, but the materials are soon returned to their arbitrary decimal-numbered slots, and even annotated bibliographies suggest little about the fascinating and complex relationships between the works.

The Grapes of Wrath is about the Dust Bowl, "Okies," the exodus to the promised land of California, and the desperate plight of migrant workers such as the Joad family. But it is also about the American family and about our economic system, about the love of land and its care, about government programs, folk beliefs and folk music, about the thirties, the New Deal, prejudice, brotherhood, violence, and the idea of a utopia out west. To extract all the juice from these grapes, and to help students see connections to their own lives and experiences, a teacher deals with a novel not as an isolated piece of literature, but as one reflecting the times, the issues, and the author and other writers, artists, thinkers, and survivors.

When it is completed, Grapevine will provide the teacher with the following:

- An extensive selected body of teaching material in the form of text, still and moving pictures, and sound.
- Easy access to that material in a large data base linked by topic.
- A method by which the teacher can modify, add, edit, and rearrange text, still and moving pictures, and sound.
- A system for skimming through the material, browsing, searching, or studying it thoroughly.
- Extensive annotations, suggested activities, and questions on command at critical points.
- Information on sources for all quotations, citations, and graphics on command.
- In its ultimate stage of development, a powerful system that will allow the user to manipulate and integrate text, still and moving images, and sound in order to create multimedia documents.

Colloquy Among Some Real and Hypothetical Teachers

[The following conversation never took place, because five of the participants are fictitious. Yet we imagine that they represent some of the viewpoints and questions of real teachers. The relatively real people—Campbell and Hanlon—speak with one voice, that of "reply."]

Mrs. Blue: What are all these topics you mention? What was it? 33 works and 54 topics? Or...

Mr. Gold: I believe it was the other way around, Mrs. Blue. They said 33 topics and 54...

Reply: ...works. That's it. 54 works, with others being added from time to...

Ms. Green: What works are those? Where did you find them?

Reply: We use the term "work" to mean each of our sources, not only books, such as *Factories in the Field*, but also TV documentaries, films, magazine articles, and recorded interviews. By "topics" we mean ideas or subjects from *The Grapes of Wrath*, for example California, migrant workers, and economics, which are touched upon in other works, such as *Hard Times* or the Farm Security Administration photographs. Some were in the school library from the beginning—but not connected directly with *The Grapes of Wrath*. Others we had to search for, or we came across, or they just happened.

Mr. Gray: You say 33 topics? What are the others?

Reply: Glad you asked. Here's the list of all 33 topics:

Alien Labor	Government	New Deal
Arts	Programs	1930s
California	Growers	Okies
Camps	History	Photos
Criticism	Influence (of	Prejudice
Depression	Steinbeck's	Reaction
Dust Bowl	Work)	Philosophy & Religion
Economics	Land Ownership	Social History
Ethics & Morals	Land Use	Steinbeck
Family	Love of Land	Unions
Farmers	Migrant Workers	Utopia
Folklore	Music	Violence

We needed them, because teachers want not merely stacks of books, articles, videotapes, and the rest, but a wealth of material like that *connected* logically, *linked* to form paths that lead the student to intriguing byways and illuminating vista points. Teachers want conceptual organization in order to present materials to students in effective and meaningful ways.

Ms. Green: How do these topics connect to all those works?
Every work doesn't deal with every subject, does it?

Reply: No, you're right—some topics are touched on in only a few works.
And some works are related to only one topic, or a few topics only.

Here's part of a matrix, or "web," we drew to show the relationships:

STEINBECK PROJECT WEB (SECTION)

TOPICS →						
WORKS ↓	ALIEN LABOR	CAMPS	DUST BOWL	FAMILY	GROWERS	
Grapes of Wrath	○	●	○	●	●	●
Dust Bowl Diary	○	○	●	●	○	○
Factories in Field	●	●	○	○	●	●
Hard Times-book	●	●	●	●		●
Hard Times-tape	○	○	○	○		○
Movie-Grapes...		●	○	●	●	
Photos./Lifetime	○	●	●	●	○	○
(MORE WORKS) ↓						(MORE TOPICS) →
	●					
	○					

● MAJOR EMPHASIS
○ MINOR EMPHASIS

(Note: There are at least 33 topics and 54 works. Possible links=1,836)

You see that this is only a sample showing how seven works connect to six topics, for 42 possible combinations. The full 54 works times 33 topics...

Mr. Gold: Your arithmetic is correct—1,836 possible links.
Have you explored all those?

Reply: No, that's part of the total program, but we haven't developed all of it yet.

Mr. Gold: I'm not an English teacher. Math and science are my fields. But seeing you go to all this trouble with a novel, I have to ask, what is it you English teachers think you need?

Reply: The text of a novel is only where we begin in literature. I want to be able to look at a question, to do a data search of the text of *The Grapes of Wrath*, to search related books. What is the role of the grower, as elaborated on in *Factories in the Field*, compared to the way Steinbeck views the grower? Are there any other works about growers in California in the 1930s? How do these materials compare with Steinbeck's work? I want to look at the styles of the other writers—the conclusions they drew. Did others see the same world Steinbeck saw? The asking, the searching, and the answering will provide pleasure to the student and the teacher. It will make the student a more critical thinker and involve him or her in ideas. The teacher and the student can become collaborators and partners, asking and answering important questions about literature and ideas.

Mrs. Blue: What started you two on this project?

Reply: Well, Pat was teaching a unit on *The Grapes of Wrath*. Bob was rummaging around in his card catalog and his memory for related material, but the conventional library tools and techniques—though they led to some obviously useful things, such as a filmstrip "*The Grapes of Wrath* and the Thirties"—were not adequate to the task, as is often the case. For example, there was no subject heading for "Dust Bowl." The closest was "Droughts—U.S." Some of the best information was buried here and there as chapters in books, such as one on "The Okies Forty Years Later" in a book titled *Unknown California*.

Mrs. Blue: Then it wasn't simply a shortage of material that was your problem?

Reply: No, but many of the links were supplied by us, groping in our memories for names like Studs Terkel, Woody Guthrie, and Dorothea Lange. Without these links, students couldn't find, or overlooked, materials that proved fascinating and useful. After a worthwhile set of materials is found and used, it must then be disassembled, returned, and scattered. The next teacher must repeat the whole procedure.

Mr. Gray: Isn't even redoing all that a pretty healthy research process?

Reply: In some ways. But well-motivated and able students can learn the whole array of research skills with no difficulty. When they don't succeed, it's generally out of frustration, because the system of cataloging doesn't go deep enough to help them find all the scattered appropriate materials. Using three-by-five cards is a pretty crude technique in the age of electronic data processing.

Mr. Gold: Aha! So now the computer enters the scene. Is that it?

Reply: Yes, but not as the hero coming to our rescue, exactly. More as a possible tool. We three represent a teacher with a need for materials, a librarian with a limited supply of the materials and a not wholly satisfactory system for delivering them, and a computer technology theorist with some ideas for bridging the gap.

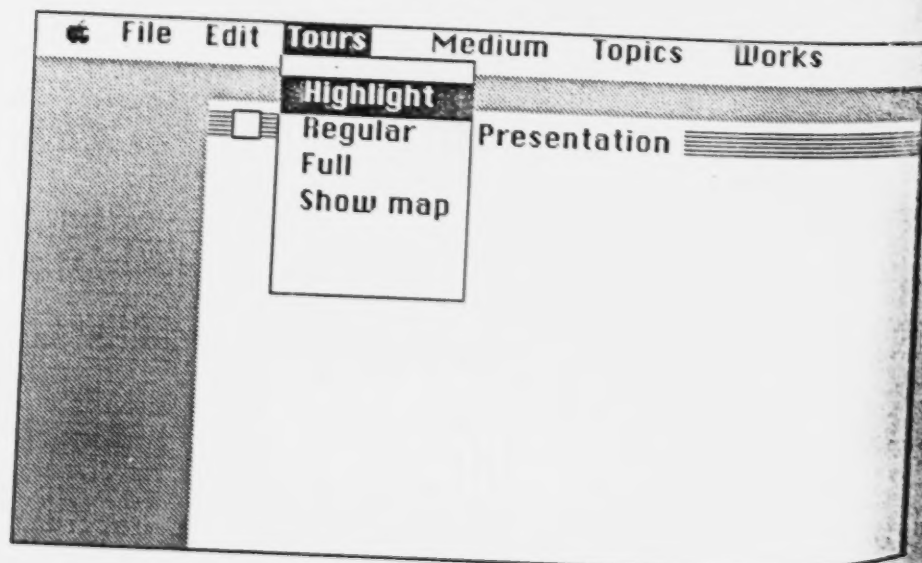
Ms. Green: So you decided to computerize Steinbeck?

Reply: No, we didn't start by thinking of a computer and then asking, "What can the machine do for us?" We started with *The Grapes of Wrath* and began a process of assemblage: searching, annotating, labeling, looking for links to works of any kind that might shed light on the novel, the issues it raised, the author, and the times. Only after we were under way making links did the need for a computer data base with some special features become very apparent.

Mrs. Blue: All this about how you proceeded in the work is very well, but it isn't telling me what the program *does* for me or my students. What happens when we follow one of your links?

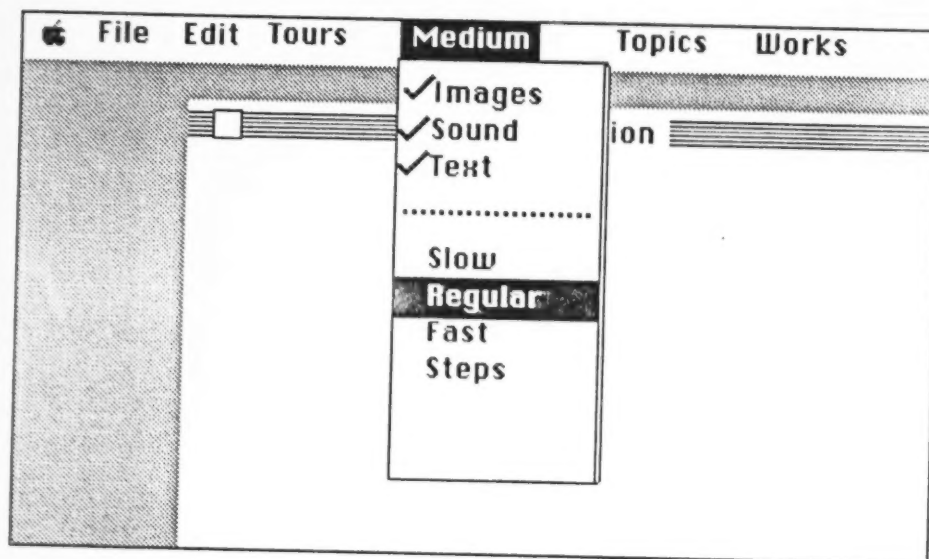
Reply: Well, let's visualize the program when it's operational in one possible form, including moving images and sounds that can be edited.

We'll assume that you want to see a presentation first, so we'll see what a Presentation screen *might* look like.

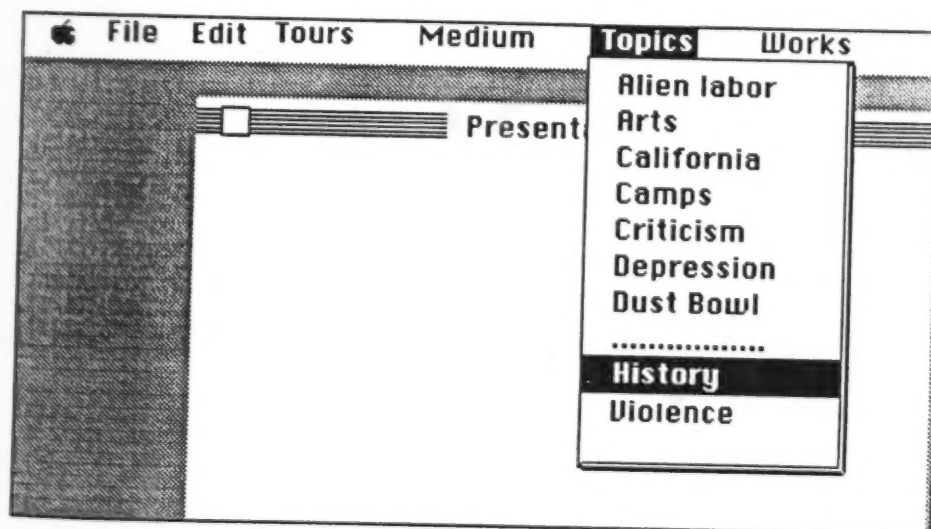


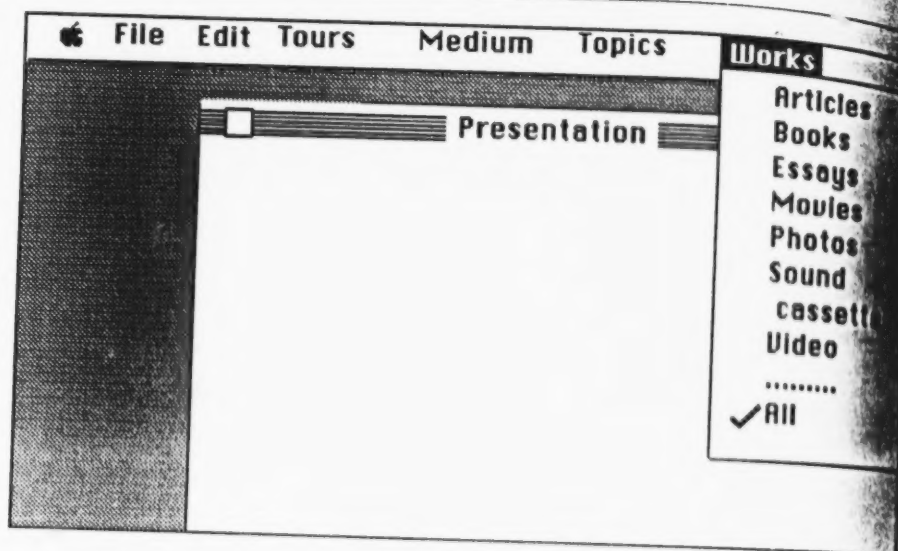
Now, in the role of researcher, or reporter, or time-traveling tourist, your first choice is to decide on a brief Highlight Tour, a longer Regular Tour, or the Full Tour. In this example, we have chosen **Highlight Tour**.

As to the medium—whether **Images**, **Sound**, or **Text**—we will choose all of these, and **Regular** speed.



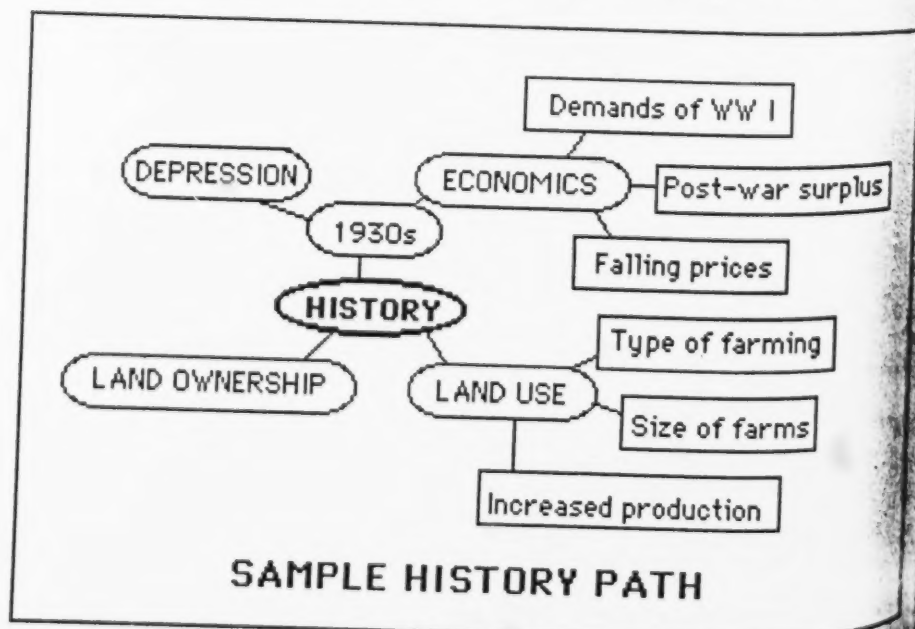
Since the tours are by topic or work, you give the computer that information by clicking on one of the topics or works in the menus.





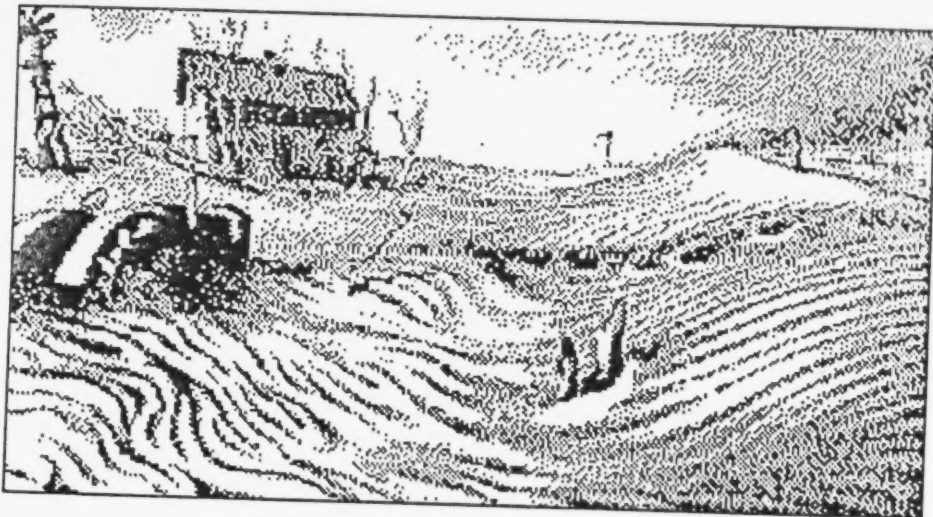
Your menu supplies a list of all 33 topics—though in this abridged example only a few topics are listed—and **History** is highlighted. You also have a choice among works, and here all types of works would be brought up because of the check in front of **All**.

Your Highlight Tour of the topic History begins. First, you might decide to click on **Show Map**; if so, you would be shown something like this:



You notice that History is highlighted, and you may take time to study some of the paths, links, and loops. A very brief Highlight Tour might consist of displays of text, sound, moving and still pictures, including material like the following examples.

BLACK AND WHITE PRINT ("Dust" by Mervin Jules, from *Graphic Works of the American Thirties*, plate 61)



Text (from *The Grapes of Wrath*, p. 313)

"And the little farmers who owned no canneries lost their farms, and they were taken by the great owners, the banks, and the companies who also owned the canneries. As time went on, there were fewer farms. The little farmers moved into town for a while and exhausted their credit, exhausted their friends, their relatives. And then they too went on the highways. And the roads were crowded with men ravenous for work, murderous for work."

DOCUMENTARY FILM CLIP
(from "The Plow That Broke the Plains")

PICTURES

Newspaper headline: "WAR
NEWS TUMBLES
SECURITIES...WHEAT
PRICES SOAR"

Tractors moving through
fields of wheat, cultivator
blades cutting into the
earth.

Scenes of World War I
bombardment in Europe.
Tractors and tanks,
Military parades.

Huge combines moving
abreast through fields of
wheat.

Poster: "SERVICE MEN! FREE
LAND! GOVERNMENT
HOMESTEADS IN THE
PLAINS!"

Stock ticker tape running
faster and faster, wheat
pouring ever faster—then
the stock ticker falls and
smashes.

Scenes of arid farms,
abandoned machinery.
Sand blowing. Dead cattle.
Wind rising to storm level.
Dust storms. Farmers
loading up to leave.

NARRATION

"Wheat will win the war! Fast
wheat. Wheat for the boys over
there... Wheat for the Allies.
Wheat at any price!"

"Then we reaped the golden
harvest. Then we really plowed the
plains! We turned under millions
of new acres for war wheat. We
had the manpower. We invented
new machinery. The world was
our marble."

"Once again the rains held off and
the sun baked the earth... This
time millions of acres of plowed
land lay open to the sun."

"Blown out, baked out, and
broke."

TEXT (from Herbert Hoover. "The Challenge to Liberty" in Problems in American Civilization, p. 65)

"The farmer is the most tragic figure in our present situation. From the collapse of war inflation, from boom, from "displacement of work animals by mechanization," from the breakdown of foreign markets, from the financial debacle of Europe, and from drought, he has suffered almost beyond human endurance."

AUDIOTAPE (interview with Oscar Heline, Iowa farmer, from Hard Times audiotape)

"Grain was being burned. It was cheaper than coal. Corn was being burned. A county just east of here, they burned corn in their courthouse all winter, '32, '33. You couldn't hardly buy groceries for corn. It couldn't pay the transportation. In South Dakota the county elevator listed corn as minus three cents. Minus three cents a bushel. If you wanted to sell 'em a bushel of corn, you had to bring in three cents...

"We had a lot of trouble on the highway. People were determined to withhold produce from the market—livestock, cream, butter, eggs, whatnot. If they would dump the produce, they would force the market to a higher level. The farmers would man the highways, and cream cans were emptied in ditches and eggs dumped out...

"The rank-and-file people of this state—who were brought up as conservatives, which most of us were—would never act like this. Except in desperation."

TEXT (from *The Grapes of Wrath*, p. 383)

"The men who work in the fields, the owners of the little orchards, watch and calculate.

"And the first cherries ripen. Cent and a half a pound. Hell, we can't pick 'em for that... And on the ground the seeds drop and dry with black threads hanging from them.

"The purple prunes soften and sweeten. My God, we can't pick them and dry and sulphur them. We can't pay wages no matter what wages.... The meat turns dark and the crop shrivels on the ground."

COLOR ILLUSTRATIONS (from *American Heritage*, April, 1977, pp .88-93)

California fruit box labels: brightly colored and highly romanticized views of western animals, mountains, produce, señoritas, cowboys, Indians, and other fantasies.



PHOTOGRAPH, BLACK AND WHITE (from *This Fabulous Century*, v. 4, pp. 14-15)

Photograph of the front of a restaurant and a barber shop in New York's Bowery in 1935.



TEXT (Ibid., p. 24)

"Annual Earnings: 1932 to 1934," a table of average annual income of workers in 37 occupations. Examples: dentist, \$2,391; hired farmhand, \$216; steelworker, \$422.87.

Mr. Gray: That music and those pictures really had a wallop. And when we came to that image of the stock ticker falling over, I wanted to get some prices right then on some actual commodities.

Reply: You could do just that, Mr. Gray. At that point you could give a Pause command. Then you could click Show Tour Map. You would get a map not just of the Highlight Tour, but of branches, including one to your Falling Farm Prices side road. If you clicked on that branch you could detour and return to the main Highlight Tour later—or not, as you wished.

Mr. Gray: Excuse me, but I have to find out how much flexibility is allowed in a program like Grapevine. I mean, if I want to play down the sentiment when I teach Steinbeck and concentrate on technique or philosophy or economics, can I do that?

Reply: Certainly. The very wealth of material that the technology is going to make available ensures that any kind of emphasis will be possible. No one will be able to cover it all—or want to. If you or your students want to pursue the legislation, the history of land ownership in California, the climatology, a lot of factual material of that kind will be included, and still more pointed

Ms. Green: Speaking of that, you showed quite a lot of text in your example. Are you including just quotations from books and articles, or whole chapters or more? And is reading so much on a screen a good idea?

Reply: We've thought a lot about that, and we have some guidelines for ourselves that we think make sense. First, if you can have a book or an article on paper for anyone who needs it, that is obviously best—so having a computer program is not a substitute for a book or a set of books if you can get them. On the other hand, there are *never* enough books. It appears that technology is going to give us enormous storage capability, so *why not* include as much relevant text as possible? Text on the screen can be used for browsing and selecting. When needed, you can print out longer text selections. Some materials are absolutely essential yet not easily available, like Benson's "To Tom Who Lived It" article. In addition, a great deal of text needs to be in the program as junction points for linking to everything else. We can't emphasize too strongly that Grapevine is not just a lot of stuff—it's a lot of intricately *connected* stuff.

Mrs. Blue: And the reason that Mr. Gold and I were invited to sit in on this panel is that someday there will be similar linked programs for us to use in social studies and in mathematics and science? Is that right?

Reply: Yes, we hope so. Since the computer can store so much text and sound, and so many pictures, connect them, and allow users to follow or change those connections and manipulate the stored material in *any* subject, the applications have no limits. In the case of social studies, though, it will be possible to create from Grapevine itself a unit on the Depression and the 1930s from the social studies' point of view as readily as from the literary.

Mr. Gray: Your Grapevine seems to be an impressive package. But will it really be different from any other collection of articles, books, pictures, sound, and so forth?

Reply: Yes, not only because of the interconnections and links that are included (and which you can expand), but also because you will be able to tailor it to your classes.

Mr. Gray: Explain to me what "tailoring" the program to my classes means.

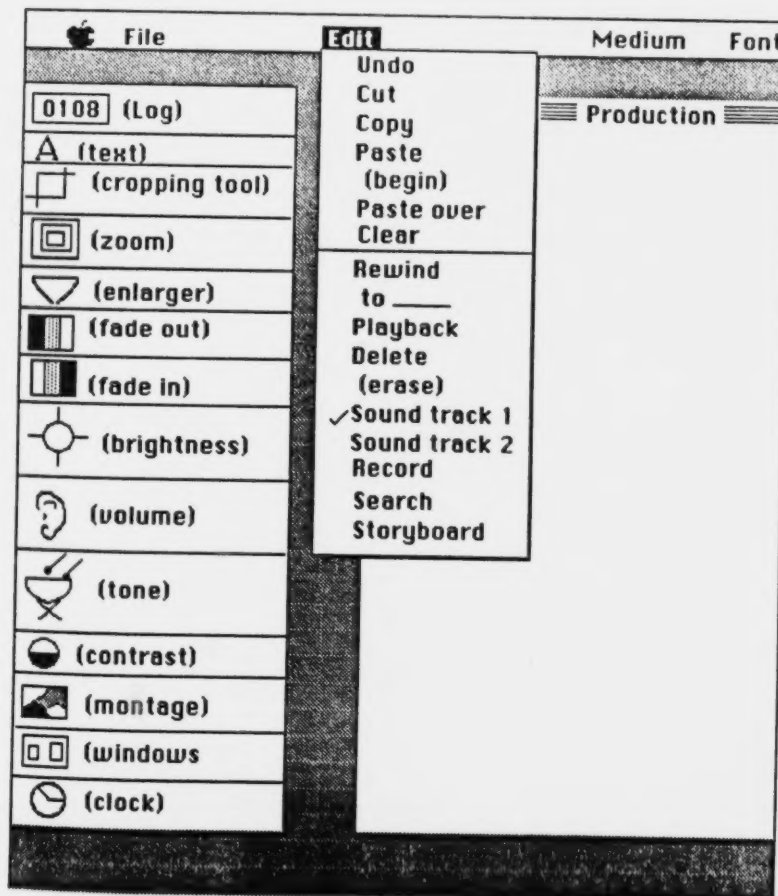
Reply: We envision at least three levels of interactivity and "modifiability."

The first level of interactivity is a scratchpad, perhaps on the datadisk—a place where the teacher or another user can make comments and additions. Next would be the capability of writing, pasting, or deleting directly within the program. The ultimate stage, available to both teacher and student, is a built-in media processor analogous to a word processor but capable of editing and manipulating moving and still pictures and sound as well as text.

Mrs. Blue: Do you mean pasting in film scenes?

Ms. Green: Oh, I'd want to do more than just paste them in. I'd want to be able to direct—or edit, at least—and have zooms and dissolves and all that.

Reply: Again, just pasting in a film scene or recording a "voiceover" or "music over" track would be simplest—and useful. But we have no doubt that complete authoring/editing power over all media will be possible eventually. That's why we listed some pretty sophisticated techniques on this **Production** application menu.



Mr. Gold: Do you really need to give an elaborate authoring system like that to students?

Reply: We believe there is no reason to provide a power to the teacher not also available to the learner. Currently, learners and teachers, too, are primarily *consumers* of media, subject to media's power to persuade and convince. Students and teachers need the skills to use all of these tools for their own purposes and in their own styles. The world speaks to our young people not only with words but with color, motion, music, all shaped with dazzling virtuosity. We think that all students should learn to communicate with the world using this new language.

Mrs. Blue: You're not forgetting, are you, that teachers and students *do* make videotapes, and audiotapes, and slide shows?

Reply: True, but you have probably experienced, as we have, the fact that a teacher can put together a multimedia presentation with about the same degree of ease as a medieval monk producing an illuminated manuscript. Computers ought to be able to help.

Mr. Gold: Let's get back to the essential question of how a teacher could use a program like Grapevine. For instance, do you see it used only as a supplement for individual students? Or could it be used with the class as a whole? If so, how?

Reply: Obviously, more computers are going to be available to more and more students. Still, we can't assume that overnight every student is going to have a personal workstation. And even were that the case, there would always be a need for class discussion, teacher instruction, and other activities. We have developed the Hanlon-Campbell law of program design, which states: Given more than one attractive alternative, choose them all. We see Grapevine today as eminently applicable to individual, small group, or large group learning, whichever is appropriate at the time—the only limitation being that of logistics and hardware: how big the class, how large the available screen.

Mr. Gray: Do you know what you're asking? These things don't just happen, and when they do, they won't come cheap.

Reply: All the more reason to make clear to computer engineers now what our needs are. And should we make the erroneous assumption that the technology we need will *always* be beyond our means?

Mr. Gold: I have a question about the role of the individual user. Is he or she a gamester, a tourist, a reporter, a researcher, or what?

Reply: Perhaps any or all of those roles might be appropriate at various times. We believe the teacher, not the program, will have the greatest influence in determining the user's role.

Mrs. Blue: I hope so. If a student of mine tried to be a *passive* tourist in a program, she wouldn't get by in my class. The student would have to assume a role like a reporter and investigate and solve problems.

Mr. Gold: I have a question about being able to modify the program. Do you have in mind that a class may add or subtract questions, think of new follow-up activities, make new links, or even new paths?

Reply: Yes.

Mrs. Blue: Then how will you preserve the integrity of the program? And how could I decide what was worth passing along and what to discard?

Reply: Of course you could always maintain a master copy of the program. Then you would be free to make your own judgments concerning changes and act on those, or...

Ms. Green: ...or you might want to set up a student review board in your class, or have the whole class review the changes as a culminating activity in the unit.

Mr. Gold: One of you is a librarian—I don't remember which one—but do you see this kind of linking up of books and other media as something that relates to a library?

Reply: Definitely, in school libraries, at least. If a library is to be something more than a room where books are standing up instead of lying down as they are in the textbook room, then it is a place where connections—paths leading from one thing to another—can be discovered and pursued. The catalog and indexes let learners follow these leads now, in a rudimentary way, but the computer will expand that power beyond our ability to imagine it. Until now, libraries have hung together like a wired-together skeleton of a brontosaurus. They are about to start acquiring a nervous system.

Ah...pardon me, Mr. Silver, but I can't help noticing that you haven't had a single word to say in this whole session. May I ask why?

Mr. Silver: That should be obvious. I'm merely a hypothetical teacher, not a real one. Look, there's straw sticking out of my shirt! How do you expect a hypothetical character to ask the really tough questions?

Reply: You have a point. But haven't you heard of fictional characters who took on a will and a life of their own? Like Pygmalion with...with...

Mr. Silver: ..with Galatea?

Reply: Right. Why don't you give it a try? Go ahead, ask the toughest question you can think of.

Mr. Silver: (after a pause) All right, here it is. Schools today are preoccupied with the problem of accountability. More and more the effectiveness of teachers is based on student performance on standardized tests. In a climate like this, why create a program with such broad goals as Grapevine seems to have, one that will be very difficult to evaluate?

Mr. Gray: Whew! Was that a question or a lecture?

Reply: It's a fair question, all right, and a tough one indeed. A short answer this. Accountability we teachers cannot shirk, nor do we want to. We must be able to defend and prove the effectiveness of what we do. Where there are valid measures of skills and knowledge, and when student performance falls short, we should be held responsible and be required to obtain better results.

Still, this doesn't mean that we may therefore shirk the obligation nor miss the opportunity to teach as richly and complexly as we can. The instruments available to tell us whether we are teaching well still remain crude in comparison to the complexity of human interaction and insensitive to the whole range of insights that literature, history, science, and other disciplines entail. While we refine these instruments, should we be content to teach only what can easily be measured and quantified? Of course not.

While computers can be used in the service of any educational philosophy, some think that they lend themselves most readily to what is most rigorous, austere, and authoritarian. We believe that this is not necessarily so. Without computers we would teach *The Grapes of Wrath* or the history, the culture, the economics of the 1930s in as *organic* a style and as intellectually nourishing a context as we could manage. We look forward to teaching with the help of the computer in that style with that philosophy simply because the computer will allow us to do that better.

ALL: We wholeheartedly agree with you!

Reply: How remarkable...and how gratifying. Thank you all.

When the Grapevine project is completed, it will clearly be the work of a fairly large corps of experts in curriculum, literature, educational technology, and computer programming—all of them having spent dozens or hundreds of hours at the task. In contrast, what exists of the project today reflects the after-hours efforts of a teacher, a librarian, and an education technologist.

For this project to go forward, we three need the following: some refinements in technology that we believe are on the way; more time; financial and technical support; and help in resolving issues of copyright and ownership.

The technology to make any large, linked repository of multimedia materials easily available to teachers is not yet in place, but most of the pieces are there, and there is no doubt that they will soon be combined and engineered into a tool of unprecedented power for teaching. But for teaching what? That is a question for which we think Grapevine provides an answer.

As for technology needs, we don't yet have a data base program that allows us to make the many links we want from one piece of information—one picture, sound track, film clip, paragraph—to another. We need a data base that creates an index we can use to search, browse, manipulate, format, and print our data, and that accommodates unlimited text.

We need an interface with CD-ROM to include all the text necessary so that we can browse and search and print out with ease.

We need an authoring system, if not identical with the one we have described, then at least one that would give the user the capability to add, change, and link materials and to set up his or her own path.

When we receive funding which will buy us time, what will we do with it? We need to construct a prototype of Grapevine, a videodisc with still and motion pictures connected to the text in our data base and a clear, easy-to-follow program with which to make these links. In this way, we would set up a path, a tour through the materials for the user. And such a tour would provide a template for the teacher's lesson plans.

Projects like Grapevine will be a necessary test of the doctrine of "fair use" of information in all its forms. Flexible and fair compromises will have to be worked out. For us, an important ameliorating factor is that projects like Grapevine will not supplant the books, films, videocassettes and the like from which sample materials are used, but rather give them greater attention, and in the long run, stimulate sales and so increase royalties.

Only when we have secured additional support, bought more time, tapped many more resources, and engaged more technical help will we be able to proceed with the task: processing all the material; that is, additional research and writing, analyzing and linking the material, finding, selecting, storing, and indexing still frames and moving footage as well as audio interviews and music....

We know that teachers would like to get their hands on the kind of teaching instrument Grapevine will be. Grapevine is not yet a completed product, but an idea for a product, and a beginning. What we need now is the support of foundations, publishers, or others who also will see the possibilities of this project as a prototype for a whole new series of exciting applications of technology to education.



Robert Campbell

Robert Campbell, a librarian at Lowell High School, San Francisco, has also worked at writing educational proposals and as a high school English teacher. He actually remembers the Depression, or so he claims.



Patricia Hanlon

Patricia Hanlon, an English teacher at Lowell High School, San Francisco, has also taught in junior high and is a fellow and member of the advisory council of the Bay Area Writing Project.